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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/645,225	08/24/2000	Peter W. Brown	32575	3218

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EXAMINER

ROY, SIKHA

ART UNIT PAPER NUMBER

2879

DATE MAILED: 07/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/645,225

Applicant(s)

BROWN ET AL.

Examiner

Sikha Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1,2, 7, 8, 12 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent 5,138,219 to Krisl et al.

Referring to claims 1 and 12 Krisl et al. disclose (column 3 lines 50-56, column 11 lines 24-30 Fig.5) an electric lamp comprising vitreous light transmissive envelope 10 containing electric light source (filament 17) within, the outer surface of the envelope being coated with thin film infrared reflecting optical interference filter 20. Krisl et al. further disclose that the multi-layer coating reflecting infrared radiation while transmitting visible radiation comprises of alternating layers of two different materials having high and low indices of refraction. Krisl et al. disclose (column 5 lines 60-67 column 6 lines 54-69, Figs. 1 and 2) 61 layers in the optical interference filter having three stack design, each stack forming repeating periods with a number of layers having alternate high (H) and low (L) refractive index materials. Although the Table 1 shows 51 layers, in actuality there are 61 layers. The adjacent silica layers where a new period starts such as layers 7,13 are each constituted of two layers but according to the design are applied as single layer (column 7 lines 28-30).

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Regarding claims 2 and 13 Krisl et al. disclose (column 1 lines 52-60) the optical interference coating made up of alternating layers of tantalum pentoxide with high refractive index and silica with low refractive index.

Regarding claims 7 and 8 Krisl et al. disclose total 61 layers in the optical interference coating.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-6, 9-11 and 14,15 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,138,219 to Krisl et al.

Regarding claim 3, Krisl et al. disclose values of thicknesses of the layers of high and low refractive index materials in Table 1 from which the ratio of the total thickness of all the layers of high index of refraction material to the total thickness of all the layers of low index of refraction material can be calculated. It is noted that the desired reflection is accomplished by selecting layer thicknesses. As claim 3 (or 4,5,6) does not recite any particular design of the coating it would have been obvious to one of ordinary skill in the art at the time of invention to modify the values of a', b', c' or a, b, c and thus change the thickness of a layer in the coating of Krisl et al. because changes in design are considered to be within the skill of the art and find the desired ratio of the

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thicknesses . With $a' = 4$ the ratio of the thicknesses of high and low refractive index layers in the third stack of the optical interference coating is 0.94. Krisl et al. further disclose (column 7 lines 51-56) that the design and the thickness of the layers can be refined by computer optimization and hence different values of ratio can be obtained.

Claim 14 recites the same limitation as of claim 3 and hence is rejected for the same reason.

Claims 4,5,6 essentially recite the same limitation as of claim 3 with different values of ratio of the total thickness of all the layers of high index of refraction material to the total thickness of all the layers of low index of refraction material, which can be determined by changing the design of the coating from Krisl et al. and hence are rejected.

Regarding claim 9, Krisl et al. disclose the claimed invention except for the limitation of total number of layers greater than 70. It has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to add more number of layers, since mere duplication of essential parts of the invention is considered within the skill of the art. *In re Harza*, 274 F. 2d 669,124 USPQ 378 (CCPA 1960).

Regarding claims 10,11 and 15, Krisl et al. discloses the claimed invention except for the limitation of total number of layers being 78 and less than 200. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re*

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Aller, 105 USPQ 233. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the total number of layers equal to 78 and less than 200, since optimization of workable ranges is considered within the skill of the art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U. S. Patent 4,652,789 to Kawakatsu et al., U. S. Patent 5,982,078 to Krisl et al. and U. S. Patent 6,087,775 to Levinson et al. disclose lamps having optical interference film coating.

U. S. Patent 5,681,666 to Treger et al., U. S. Patent 5,843,518 to Li et al. and U. S. Patent 5,944,964 to Solberg et al. disclose method of preparing optical multi-layer thin film coatings.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikha Roy whose telephone number is (703) 308-2826. The examiner can normally be reached on Monday-Friday 8:00 a.m. – 4:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on (703) 305-4794. The fax phone number for the organization is (703) 308-7382.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

SR

Sikha Roy
Patent Examiner
Art Unit 2879

LMK

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